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## Intelligence Report

Office of Asian Pacific and Latin American Analysis

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### China's Environment: Heightened Leadership Commitment But Limited Opportunities for US Firms

#### Summary

*Chinese leaders are increasingly concerned that environmental neglect and a history of poor resource management pose debilitating long-term economic and societal risks. In response they have launched an ambitious environmental remediation program.*

- Beijing's top environmental priorities are water quality and shortages, sulfur dioxide and acid rain, and forestry, erosion, and desertification, according to various official Chinese press reports.
- *Beijing is only just beginning to address the problems as it confronts a fragmented regulatory process, the absence of clearly defined property rights, and the lack of market pricing, which would reflect relative scarcities.*

*China's environmental problems—particularly greenhouse gas emissions—present challenges for the United States and the rest of the world and offer few commercial opportunities for sales of remediation equipment.*

- *China is the world's second-largest emitter of greenhouse gases—14 percent of global emissions—a source of acid rain in Japan and South Korea, a major producer of chlorofluorocarbons, a growing user of persistent organic pollutants, and a consumer of rare and protected plant and animal species.*
- *China has budgeted billions of dollars annually over the next five years on its environmental remediation measures, but most contracts are likely to be directed toward domestic industry, and tariff and nontariff barriers limit market access.*

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### A Greener Chinese Leadership...

China's senior leaders have grown increasingly aware of the costs incurred by environmental degradation, particularly its impact on economic development and the health of the population. The Ninth Five-Year Plan (1996-2000) endorsed sustainable development, and the State Council's 1996 white paper on the environment established a framework for addressing environmental problems, building on a comprehensive legal code for environmental protection first introduced in 1979. The plan also increased investment in the environment to 1.3 percent of annual GDP, funded largely by increases in locally collected discharge fees. According to official Chinese press reports, Beijing extended funds and provided subsidies for some 1,600 projects addressing air and water pollution, solid-waste disposal, and erosion reduction. Beijing claimed that by the end of 1997 more than 700 projects had been started, 180 projects completed, over \$10 billion earmarked, and \$1.3 billion spent, according to official Chinese press reports.<sup>1</sup> Nevertheless, China failed to meet its spending target; only 1 percent of GDP was spent in 1998, according to official Chinese press reports, despite an aggressive infrastructure program that included investment in waste-water treatment plants, possibly because of slow progress on a number of projects.

In recent years the leadership has become more outspoken about the environment because of the failure of the bureaucracy at all levels to make significant gains in correcting the problem:

- Premier Zhu Rongji in his speech to the National People's Congress last month said that the leadership had a responsibility to "future generations" to improve planning, avoid waste, and protect resources, and stressed that enterprises that discharged pollutants in excess of stipulated standards must be closed down.
- President Jiang Zemin at an environmental forum in 1998 called on all levels of government to contain the worsening pollution and improve environmental quality in key cities such as Beijing. He also directed government bodies to incorporate environmental protection goals into their plans.
- National People's Congress Chairman Li Peng at numerous conferences over the past three years has called for greater efforts to address China's environmental problems and underscored the problem of a deteriorating environment and the negative impact on economic development.

<sup>1</sup> The Ninth Five-Year Plan targeted for clean up three rivers: the Liao (Liaoning Province), Huai (Anhui and Jiangsu Provinces) and Hai (Hebei Province); three lakes: the Tai (Jiangsu, Dianchi (Yunnan), and Chao (Anhui); two regions with severe acid rain problems; and the city of Beijing.

### **Beijing's Short Reach Slows Local Reforms**

China's political system is fragmented; Beijing wields limited authority over environmental affairs, and numerous local regulatory bureaus have responsibility for only a small part of a much wider problem. As a result, China lacks a nationwide or even a regional regulatory or planning body to manage resources, according to the World Bank. Instead environmental policy is formulated and implemented locally with important ramifications:

- The most vivid example is water management, which is particularly severe in the arid north, where local government water bureaus each draw water on the basis of local needs without looking at overall regional requirements, resulting in unsustainable use rates. Because of excessive siphoning of water, over the past 10 years the lower reaches of the Yellow River have increasingly run dry for longer periods every year.
- A fragmented regulatory process also aggravates air and water pollution because the municipality doing the polluting does not necessarily suffer its consequences. For instance, industries and households dump untreated waste into rivers, which becomes the problem of those living downstream. Similarly, winds carry sulfur dioxide from industrial regions to where it turns into acid rain over forests and farms.

Beijing has proposed strengthening provincial authority over environmental problems, which would facilitate broader management and regulation, but it is unclear whether the provinces would be willing to accept additional responsibilities or that they will be any more capable of addressing the problem.

**... Has Set Priorities for Amelioration...**

Beijing has remained focused on specific environmental problems that pose a long-term threat to public health and agricultural production, including water shortages and pollution, sulfur dioxide emissions and acid rain, and erosion, desertification, and deforestation, according to numerous official Chinese press reports. But other issues such as the use of ozone-depleting chemicals, toxic waste disposal, biodiversity, and greenhouse gas emissions have not received as great attention probably because they have been perceived as not posing an immediate threat to society and the economy.

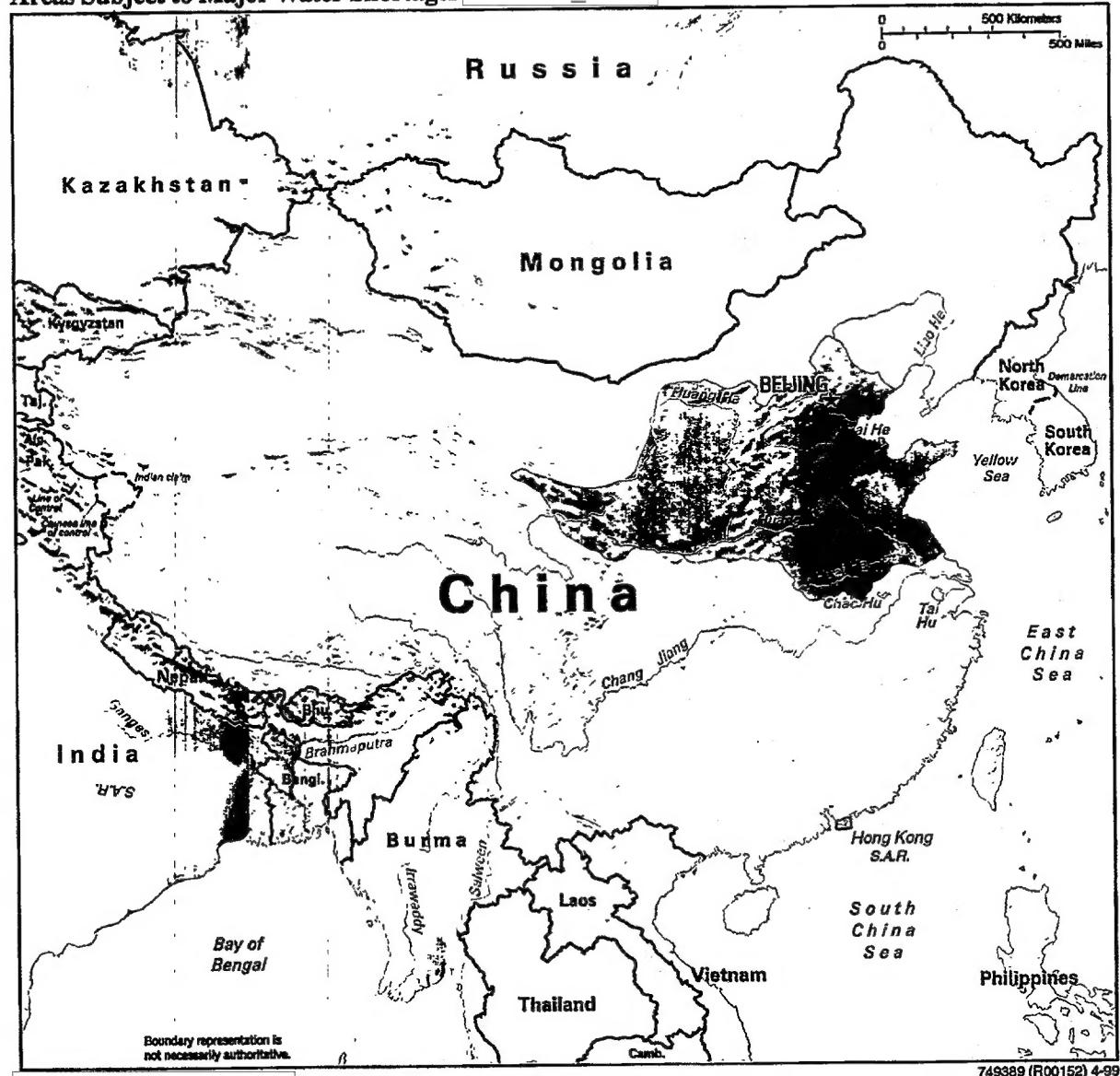
**Water Shortages.** China's per capita water resources are the second lowest in the world, according to the World Resources Institute, and the Chinese Academy of Sciences (CAS) in 1998 warned that, if the problem was not addressed promptly, the country would face a crisis in the middle of the next century. CAS also reported that, according to a survey, almost half of 640 major cities nationwide suffer water shortages and over 100 face severe scarcities. CAS recommends raising water prices to encourage savings, but Beijing has yet to respond out of fear of popular local resistance.

**Water Pollution.** Almost every major body of water in China is polluted to some extent, including 90 percent of all rivers, 20 percent of which are so badly polluted that the water cannot even be used for irrigation. The main problem is that industries and households discharge waste untreated into bodies of water, according to official Chinese press reports. Beijing has begun to address the problem by increasing investment in wastewater treatment facilities, and official Chinese press reports claim that almost 100 were completed and 325 were under construction by the end of 1997.

**Reforestation.** China's forest cover is less than 14 percent of its total land area and on a per capita basis one of the lowest in the world, according to the World Resources Institute. Excessive logging has contributed to severe erosion, affecting almost 40 percent of the country and causing the loss of 5 billion tons of soil annually, according to official Chinese press reports; desertification, threatening the livelihood of 170 million people and affecting over 3 percent of the land area, according to

official Chinese press reports; and particularly flooding, which Chinese press reports suggest has affected some 88 percent of the population. Following the severe floods in the summer of 1998, Premier Zhu Rongji personally banned logging in the headwaters of major rivers, and the State Council ordered a stop to harvesting in 70 percent of the forests by 2000, and promised to phase out logging entirely in the

Areas Subject to Major Water Shortages



remaining 30 percent of forests [redacted] To satisfy market demand, Beijing has cut tariffs on imported wood products and encouraged Chinese lumber companies to seek supplies overseas, according to official Chinese press reports. [redacted]

**Air Pollution and Acid Rain.** The World Resources Institute reports that nine out of the 10 most polluted cities in the world are in China, and official press reports indicate that 30 to 40 percent of the country is affected by acid rain, contributing to a loss of \$12 billion a year in lost timber and crops. Beijing has taken the problem very seriously and in 1998 began requiring all major municipalities to monitor and publicize air quality figures and ordered power plants and industries that use coal—the main source of the problem—to move outside of cities. In addition, the authorities mandated the mining and use of low-sulfur coal and coal washing and closed a number of small inefficient and polluting power plants. The government has also directed that all power plants and industries reduce sulfur dioxide emissions by 2000 and install desulfurization equipment by 2010. The guidelines are likely to carry weight with state-owned power plants and industries but will probably be ignored in the localities.

**...But Still Lacks Bureaucratic Leverage and Popular Support**

Despite significant leadership support and a well-developed environmental legal code, the authorities still must rely heavily on selective administrative enforcement, primarily through fines, rather than a comprehensive system of regulations and incentives:

- The State Environmental Protection Administration (SEPA) formulates national policy and coordinates enforcement but is bureaucratically weak and has limited authority over the local governments, which carry out policy and enforce environmental laws, [redacted]  
[redacted] Nevertheless, according to [redacted] official Chinese press reports, SEPA has had successes when backed by State Council authority and funding, evidenced in the recent progress on cleaning up the Tai and Dianchi lakes, Beijing City, and the Huai, Liao, and Hai Rivers.
- Local governments are generally far more concerned with maintaining and creating jobs than implementing Beijing's environmental policies, which may force closures and increase unemployment. Corrupt local officials also often skirt laws and regulations to line their pockets. The larger, more prosperous coastal cities have been more willing and adept at addressing and resolving the worst municipal environmental problems, [redacted]

### A Legacy of Environmental Problems

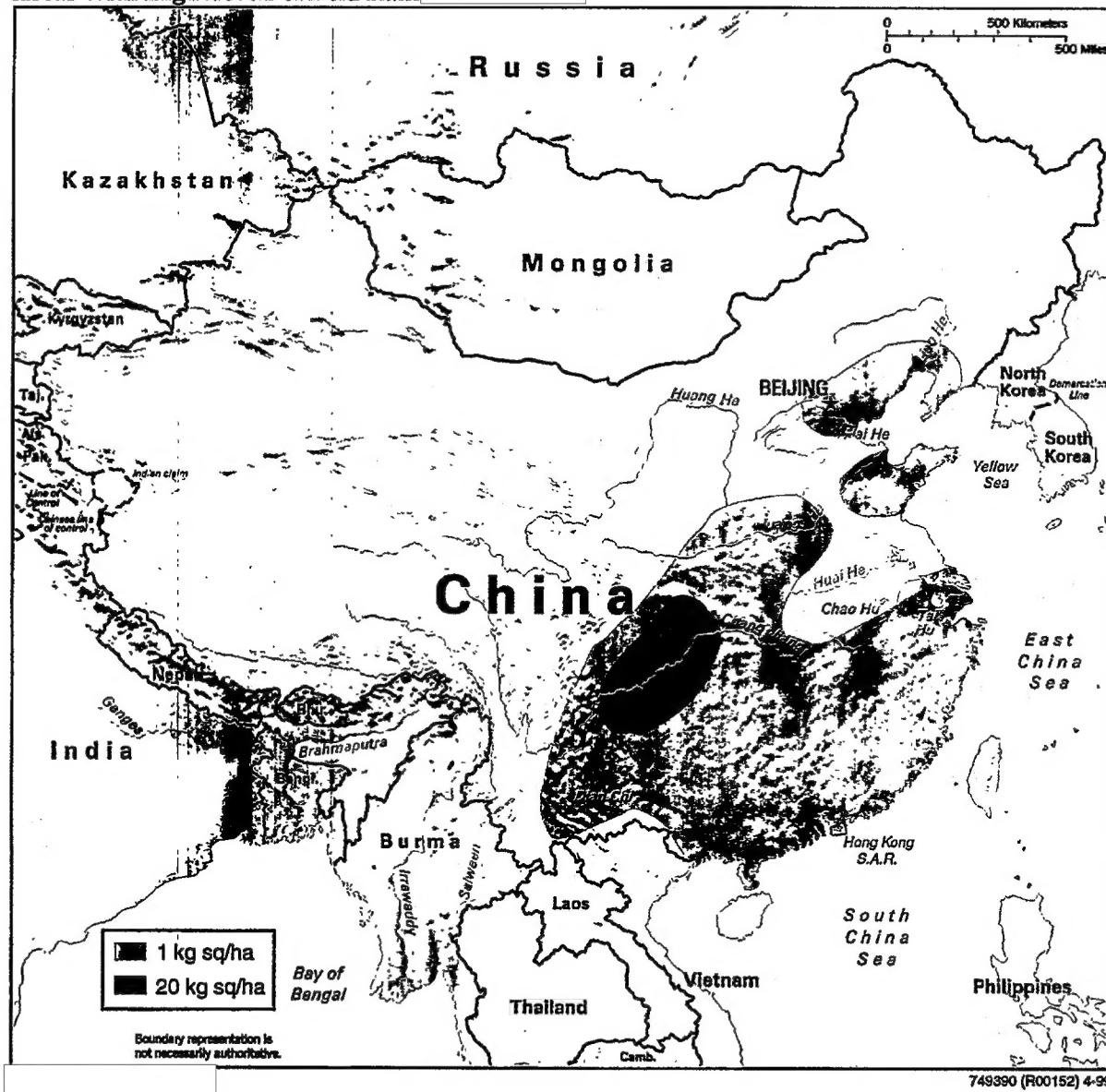
Many of China's environmental problems are a result of decisions made in earlier phases of Communist rule:

- Beijing's rejection of family planning and the consolidation of a rural peasantry in the 1950s and early 1960s, for example, produced a demographic bulge that has created severe population pressures and intensified exploitation of resources.
- An emphasis on grain production from the late 1950s through the 1970s resulted in the reclamation of lakes and wetlands—contributing to widespread flooding and loss of habitat. Planting on hilltops caused erosion, and agriculture in arid zones accelerated desertification.
- The dispersion of industry throughout the country beginning in the early 1950s has produced thousands of small inefficient enterprises, which are now a major source of much of the country's air, water, and solid-waste pollution.

The prolonged transition from a centrally planned to a market economy has aggravated the problems:

- Continued fixed low resource pricing—particularly for water—fails to reflect scarcities and encourages waste, and the absence of effective regulations and incentives hampers the deterrence of environmentally destructive activities.
- A fragmented regulatory structure, overlapping bureaucratic responsibilities, the shirking of official responsibility, and a weak legal system has produced an uneven record of environmental protection and legal enforcement.
- Rapid economic growth and the absence of a well-established system of property rights has contributed to accelerated consumption and destruction of public resources including land, forests, and wildlife.

### Areas With High Levels of Acid Rain



Popular concern about environmental issues is growing<sup>1</sup> and is likely to get stronger over time, but for now the environment ranks far behind concerns about jobs, prices, and housing:

- Public opinion surveys show that pollution that directly affects respondents—noise, smog, absence of green spaces, pesticide residues in food, and dirty public places—attracts the greatest attention and concern. Fewer than 10 percent of respondents, however, cited deforestation, loss of wildlife, or desertification as a concern. Although sporadic local protests have occurred over the years, they have been small and locally focused and are dwarfed by larger street demonstrations by unemployed workers and frustrated farmers.
- Rather than trying to contain public complaints over the state of the environment, Beijing has tried to mobilise and channel discontent to pressure local governments into doing more.

Beijing directed municipal governments to publish air-quality readings to alert citizens to the state of urban air quality.

The government also allows—but closely monitors—nongovernmental organizations (NGOs), environmental clubs, and university student groups to operate to educate the public, alert the authorities to environmental problems, and pressure local officials to enforce environmental protection measures. Classes in environmentalism are now part of the curriculum in high schools and at the Communist Party school, where all cadres must take classes throughout their career. The official press—whether popular or industry—is filled with articles on the poor state of the environment and how individuals can contribute to solving the problem. Moreover, environmental slogans—either painted on walls or on sophisticated lighted signs in public places—to educate the people have become a familiar part of the Chinese urban landscape.

#### **Few Opportunities for US Business**

China's Ninth Five-Year Plan (1996-2000) has identified over 1,000 environmental projects nationwide, including water treatment, acid rain control, solid-waste management, and technical upgrading and pollution control of power plants and industrial facilities. For example, the plan earmarked \$54 billion for pollution control but foreign investors were expected to contribute only \$4 billion, according to official Chinese press reports. A three-year infrastructure investment scheme—which includes environmental projects—to stimulate the economy, may have added to total planned expenditures.

### Neglected Environmental Issues Cloud Regional, International Relations

China's environmental problems have become foreign policy irritants in several international forums and with some of its neighbors:

- *Climate change.* China has resisted accepting targets to limit its greenhouse gases despite being the world's second-largest source, after the United States, with 14 percent of global emissions. The primary reason is a heavy reliance on coal for 75 percent of its primary energy. China had long been expected to become the number-one emitter of greenhouse gases after 2010, but a recent CIA forecast estimates that slower growth of the economy and energy demand along with increased substitution of natural gas, hydropower, and nuclear power for coal will slow the increase of greenhouse gas emissions and keep China in second place until the middle of the next century.
- *Sulfur dioxide and acid rain.* Japan and South Korea have complained about acid rain blowing across the Yellow and East China seas from China's industrialized coastal provinces. A Japanese study estimates 50 percent of the country's acid rain comes from China while South Korea claims that four times as much of its acid rain originates from China than from domestic sources.
- *Chlorofluorocarbons (CFCs).* China continues to produce CFCs, and US Customs reports that an increasing percentage of the 20,000 tons of CFCs smuggled into the United States each year originates in China. Under the Montreal Protocol, China is not required to phase out production until 2010.
- *Persistent organic pollutants (POPs).* China produces, uses, and exports several of the POPs targeted for global control under a treaty to be concluded next year. China and other large agricultural developing countries are demanding use exemptions and longer phase-out periods for POPs because they claim a heavy reliance on chemicals such as DDT, chlordane, and dieldrin for malarial control and food security and they cannot afford more expensive alternatives used in developed countries. Because of widespread use of POPs, Chinese food exports to the United States and elsewhere may contain residues.
- *Biodiversity.* Although a signatory to the Convention on International Trade in Endangered Species (CITES), which prohibits trade in protected animals and plants, the widespread demand for exotic animal and plant foodstuffs and medicines contributes to serious species loss beyond China's borders as the country illegally brings in animals and fish from around the world. Several recent Western press reports note that bears poached in the United States have supplied East Asian markets, including those in China.

Growing rhetorical and budgetary support for environmental amelioration is not likely to translate into many opportunities for US businesses in the China market. Beijing has a vigorous import substitution policy that includes fostering the development of a domestic environmental equipment industry.

Numerous tariff and nontariff barriers deter market entry:

- China's import duties are high (25 to 30 percent)—though Beijing claims it will eliminate tariffs on environment-related products by next year—and access to the wholesale market is limited, according to official Chinese press
- Capricious government product standards and an inadequate system of dispute resolution impedes foreign participation in the market,
- China also requires technology transfers, localization of production, and sourcing from domestic producers as a means of cultivating the domestic industry, according to various official Chinese press reports.
- Joint ventures are often found to be marginally profitable and build-operate-transfer schemes remain unattractive because of ceilings on rates of return,
- US companies are also at a competitive disadvantage with European and Japanese companies, which often benefit from tied aid and concessional export credits. But even these companies have difficulty entering the China market and must adapt to Chinese market barriers,

As a result, opportunities for US companies may be limited to those projects financed by multilateral agencies such as the World Bank and the Asian Development Bank—which combined spend on average \$800 million a year on environmental projects—and the United Nations Development Program, all of which require an open bidding process. Other possibilities include contracts with foreign invested companies and some joint ventures, which have the foreign exchange and the willingness to meet official guidelines. China's environmental equipment market remains small, the competition fierce, and the approval process slow and ponderous.